

Claims

We claim:

1. An industrial air or liquid handling device access and cleaning apparatus which accesses the interior of an air or liquid handling device at a pipe access location having a
5 pipe access diameter and a pipe access connection mechanism, said apparatus comprising:

a cleaning agent delivery tube capable of delivering a cleaning agent, said delivery tube having an outside diameter, a proximate end and a distal end;

a cleaning agent ejection nozzle capable of ejecting a flow of said cleaning agent fixedly attached to said distal end of said delivery tube;

10 a tube sealing means for creating an air-tight seal around the periphery of said outside diameter of said delivery tube when said delivery tube is inserted into a wall opening of said device and while said delivery tube is traversed across a predetermined operational range within said device interior;

an access control valve, said access control valve having an access end and a
15 component end, said access end having the same diameter and connection mechanism as said pipe access diameter and said pipe access connection mechanism, said access end being attached to said pipe access location, said component end being attached to said attachment end of said tube sealing means by a connecting means;

tracking means within said device interior for retaining and guiding said tube and
20 ejection nozzle for controllably directing said flow of cleaning agent as said tube and ejection nozzle are traversed across said predetermined operational range.

2. The apparatus of claim 1 wherein said tracking means includes a slotted tracking tube having a base end and distal end, said slotted tracking tube substantially but not completely surrounding said tube for guiding said tube across said predetermined

operational range and for controllably directing said flow of cleaning agent from said ejection nozzle across a predefined range of axial movement.

3. The apparatus of claim 2 wherein said tube sealing means and said distal end of said slotted tracking tube are supported at said device wall opening by a rotatable support fitting for adjusting the angular position of said slotted tracking tube, delivery tube and ejection nozzle within said device interior.

4. The apparatus of claim 2 wherein including bearing means within said device interior for supporting said slotted tracking tube at its distal end.

5. The apparatus of claim 1 where in said tube sealing means comprises a packing gland chamber, a packing gland compressor, and packing material, said packing gland compressor having an inserting end, said packing gland chamber having an interior and a receiving end, said packing material is placed around the periphery of said interior of said packing gland chamber, said inserting end of said packing gland compressor is inserted into said receiving end of said packing gland chamber in a tightening manner whereby compressing said packing material; said packing material comprising a viscous substance selected from the group consisting essentially of fluoropolymers.

6. The apparatus of claim 5 wherein said fluoropolymer is polytetrafluoroethylene.